

GREEN TECHNOLOGIES & SKILLS



India's Initiatives towards
Sustainable GREEN GROWTH

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- ▶ **1. Wastewater treatment**
- ▶ **2. Elimination of industrial emissions**
- ▶ **3. Recycling and waste management**
- ▶ **4. Self-sufficient buildings**
- ▶ **5. Waste-to-Energy**
- ▶ **6. Generation of energy from the waves**
- ▶ **7. Vehicles that do not emit gases**
- ▶ **8. Harnessing solar energy**
- ▶ **9. Vertical gardens and farms**
- ▶ **10. Natural gas boilers**

GREEN TECHNOLOGIES

- ▶ 11 Green Burial
- ▶ 12 Better Lighting - LED
- ▶ 13 Batteries
- ▶ 14 Draught tolerant Crops
- ▶ 15 Green Construction
- ▶ 16 Wide spread Composting



What are Green Skills



Connecting
People for
Green Skills

- ▶ Green skills are those skills needed to adapt **processes, services and products** to climate change and the environmental regulations and requirements related to it.
- ▶ They include the **knowledge, abilities, values and attitudes needed to live in**, develop and support a **sustainable and resource-efficient society**. These skills are required in areas such as such as Renewable energy, Wastewater treatment, Climate resilient cities, Green construction & Solid waste management

Green Growth



Green Growth and Development in India, aims to build evidence through which the Indian economy can move towards an **inclusive green growth paradigm** of development

Green Economy in India

- ▶ The green economic transition is moving slowly, and the progress made is insufficient compared to what is needed.
- ▶ Five high-impact sectors key to the Green Economy transition in India are
 1. Agriculture
 2. Construction
 3. Power
 4. Manufacturing,
 5. Transport and Tourism
- ▶ 85% of all farmers in India are small-scale and marginal.



Agriculture



- ▶ The **organic farming sector** in India has been undergoing a transformation over the past few years as a result of many new ventures that have disrupted the market. Organic farming was given emphasis in the 2017 Union budget.
- ▶ In **2015, Sikkim was named the first fully organic state** in the country.

Green Energy



- ▶ India was ranked seventh in the world in terms of investment in sustainable energy.
- ▶ The Ministry of New and Renewable energy targets to set up renewable energy capacities to the tune of **175 GW by 2022** of which about 100 GW is planned for solar, 60 for wind and other for hydro, bio energy.
- ▶ Total installed renewable energy capacity (including large hydro projects) in India touched 114.43 GW as of May 2018, which is around **33% of total energy capacity** of the country.
- ▶ **In 2016, the world's largest solar plant was unveiled in Tamil Nadu with a capacity of 648 MW.**

Green Manufacturing



- ▶ Green manufacturing in India is still at the take-off stage. While there has been significant policy development and adoption by the manufacturing industry in the area of green energy.
- ▶ There is substantial scope on both the policy front and its adoption in the areas of green products and green processes.

Green Construction



- ▶ India ranks third in the top Ten Countries for LEED (Leadership for energy and environmental design). Further green buildings is projected to grow 20% in the country by 2018. Fly ash utilisation in the construction sector has witnessed a steady upward trend Many private companies are coming up with innovative solutions.
- ▶ Wipro **saves 40% energy** worth INR 10 million on a 175,000 square feet building every year. Godrej saves **63% energy worth INR 0.9 million** energy worth rupees on a 20,000 square feet building every year.
- ▶ The Model Building Bye-Laws of 2016 mandate that all buildings on various plot sizes above 100 square metres shall comply with the green norms.

Transport

- ▶ The current patterns and trends of transportation in our cities are extremely energy intensive and highly unsustainable.
- ▶ Study conducted by the Central Pollution Control Board (CPCB) for six cities— Delhi, Kanpur, Bengaluru, Pune, Chennai, and Mumbai, the road transport sector is responsible for a majority of NOX and 30% to 50% of PM

Green Skills development in India

- ▶ The government has set a target to provide skills training to **400 million people by 2022**.
- ▶ To provide support in the form of **incentives, risk coverage, regulatory framework, technology, and infrastructure to promote green businesses** especially in the MSME sector.
- ▶ The **Green Skill Development Programme (GSDP)** of the Ministry of Environment, Forest and Climate Change (MoEF&CC) is an initiative for skill development in the environment and forest sector to enable India's youth to get gainful employment and/or self-employment.
- ▶ The programme endeavours to develop green skilled workers having technical knowledge and commitment to sustainable development. It will help in the attainment of the Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), National Biodiversity Targets (NBTs), as well as Waste Management Rules (2016).
- ▶ The number of people to be covered under GSDP will be about **5 lakh people by the year 2021**.
- ▶ More than **30 programmes** have been identified, which will be conducted in 84 institutions across the country.

Skills Training programmes

- ▶ The **skilling programmes cover diverse fields** such as
- ▶ pollution monitoring (air/water/soil),
- ▶ Sewage Treatment Plant,
- ▶ Effluent Treatment Plants and Common Effluent Treating Plants (STP/ETP/CETP) operation,
- ▶ waste management,
- ▶ forest management,
- ▶ water budgeting,
- ▶ auditing,
- ▶ conservation of river dolphins,
- ▶ wildlife management,
- ▶ para taxonomy, including Peoples' Biodiversity Register (PBRs),
- ▶ mangroves conservation,
- ▶ bamboo management and livelihood generation.

The duration of the courses ranges from 80 hours to 560 hours approx.





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India's Initiatives towards Sustainable GREEN GROWTH





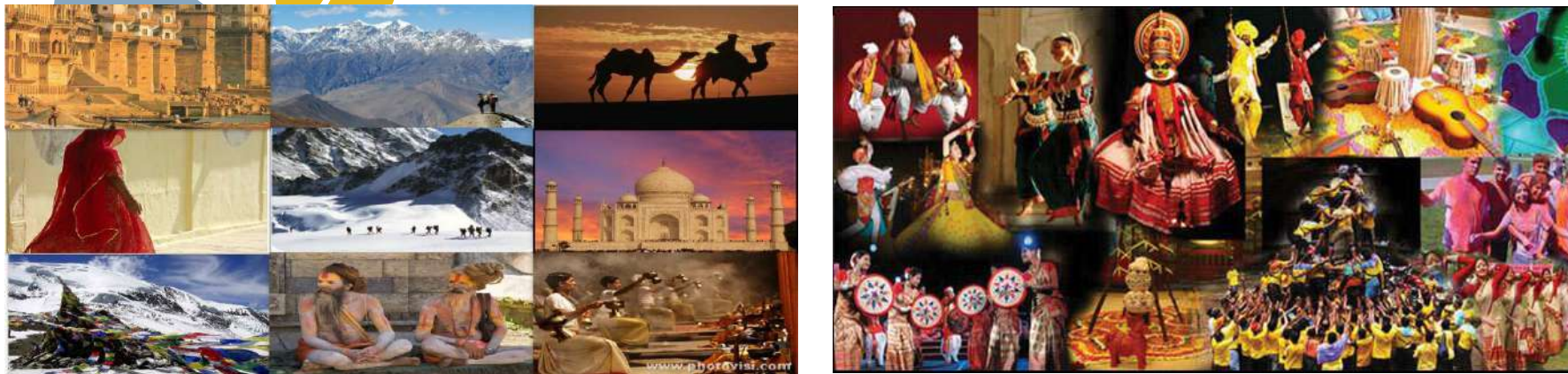
INDIA: National Vision Of Green Economy

It aims at **protecting, restoring and enhancing** India's diminishing forest cover and responding to **climate change** through adaptation and mitigation measures. It envisages a holistic view of greening that extends beyond tree planting.





Indian Cultural Heritage & Geographical Diversity



India is known for many, many different aspects – its food, culture, its massive population, its natural landscapes, its languages, classical dances, Bollywood, the birthplace of yoga, spirituality, natural beauty, its warm, welcoming citizens... the list can go on

In short, India is “THE EPITOME OF THE WORLD”.

- 1.4 Billion People (2nd largest population in the world almost 18 % share of world’s population 7.9 billion)
- 22 separate official languages (with total of 121 languages and 270 mother tongues.
- Total 28 states and 8 union territories
- More than 05 religions are followed



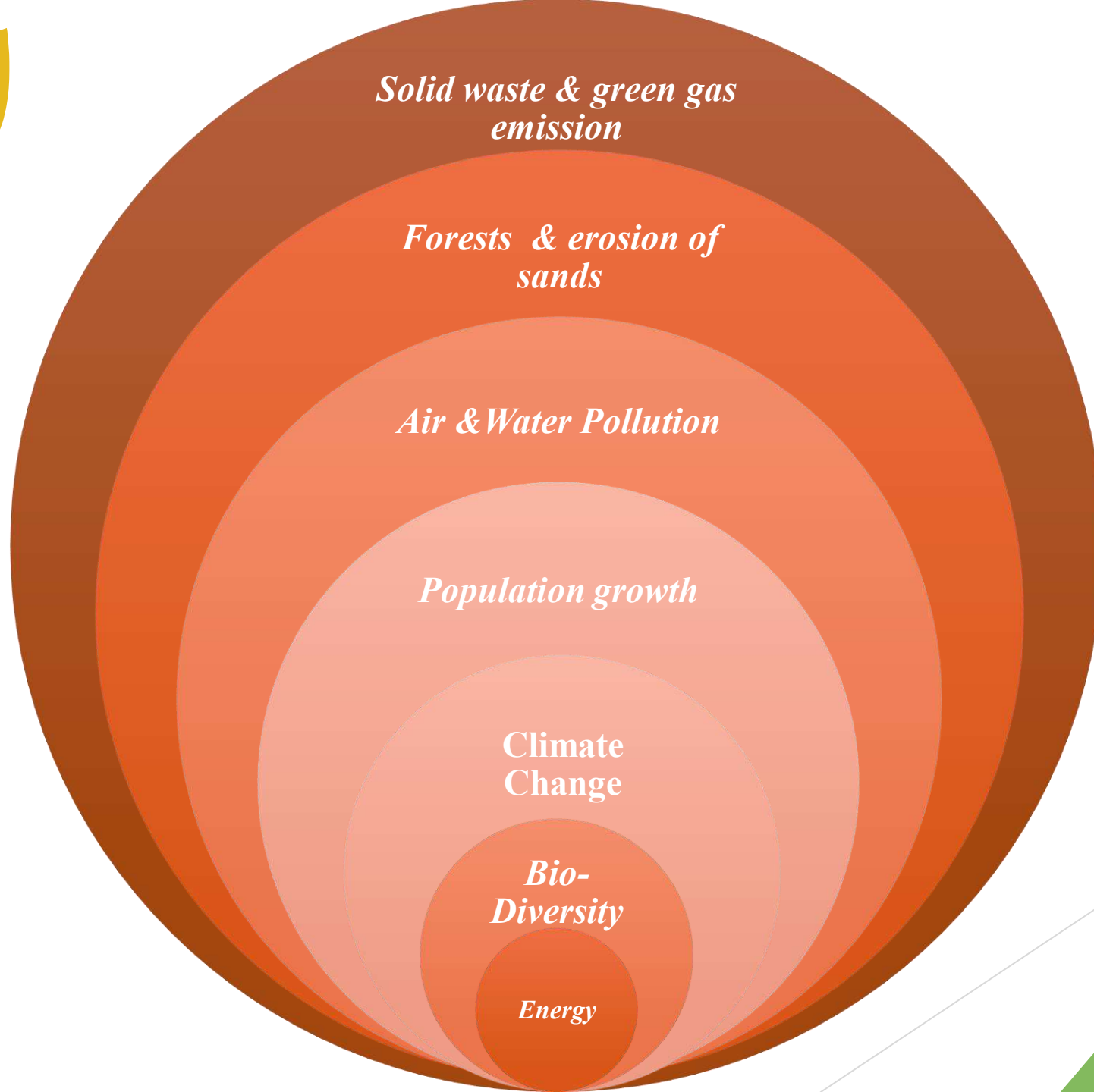
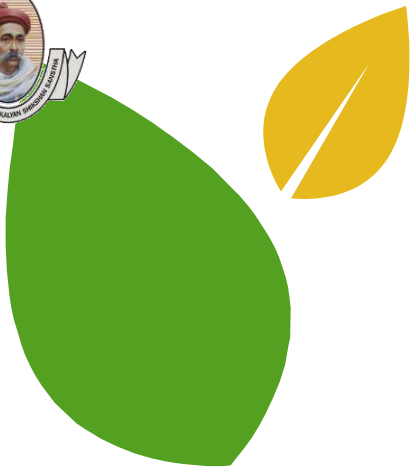
Indian Mythological culture



“Madhu Vātāḥ Ṛitāyate Madhu Kṣaranti Sindhavaḥ Mādvih Naḥ Santuṣadhi.
Madhu Naktamutusāsu Madhumatpārthiva Rajah Madhu Kṣorastu
Suryah Mādhirgābo Bhavantu Naḥ”
(rigveda,1/90/6,7,8)

Means:

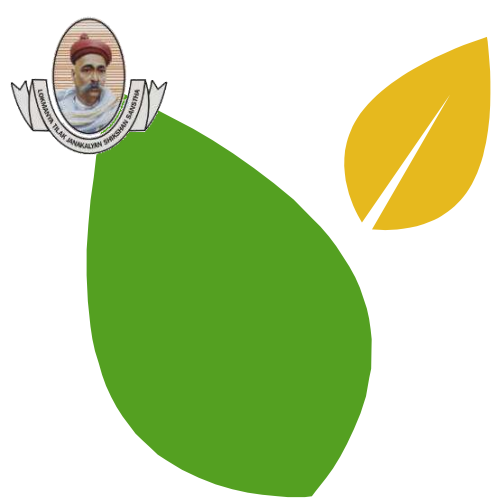
- Environment provides bliss to people leading their life perfectly.
- Rivers bless us with sacred water and provide us health, night, morning, vegetation.
- Sun bless us with peaceful life.
- Our cows provide us milk
- The plant ecology has a great importance to keep the environment in balance.





Green India Mission

Green India Action Plan



- **Propagate a healthy and sustainable way of living** based on traditions and values of conservation and moderation.
- **To adopt a climate friendly and a cleaner path at corresponding level of economic development.**
- **To reduce the emissions intensity of its GDP by 33–35 per cent by 2030 from levels of year 2005.**
- **To achieve ~40% cumulative electric power installed capacity from non-fossil fuel by 2030 with the help of transfer of technology (TOT) and low cost international finance including from Green Climate Fund (GCF).**



India: Current Transition to Green Economy



Namami Gange Programme

- Launched in 2014, Namami Gange Programme is an Integrated Conservation Mission with a budget outlay of Rs. 20,000 crores.
- The objectives of the Programme are the abatement of pollution and conservation and rejuvenation of the National River Ganga.

Key Achievements:

- **Collection of floating solid waste from the surface of ghats and rivers.**
- **Biodiversity Conservation and Ganga Rejuvenation.**
- **Creation of Sewerage treatment capacity.**
- **Construction of toilets in Gram Panchayats of 5 Ganga Basin States.**
- **Industrial Effluent Monitoring.**

Around **147 projects** under this programme have been completed. The programme is being implemented by the **National Mission for Clean Ganga (NMCG)** at the national level and State Program Management Groups (SPMGs) at the state level.





Green Skill Development Programme (GSDP)

- Formally launched on May 15, 2018, Green Skill Development Programme (GSDP) aims at training over 5.5 lakh workers in environment and forest sectors pan India.
- The programme will help in attaining Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), National Biodiversity Targets (NBTs), as well as Waste Management Rules (2016).



Key Achievements:

- Skilled trainees successfully as Biodiversity Conservationists (Basic Course).
- Skilled trainees successfully as Para-taxonomists (Advance Course).

In May 2018, the then Union Minister for Environment, Forest, and Climate Change, Harsh Vardhan, said that around 2.25 people will be employed through GSDP by 2019 and around five lakh will be employed by 2021.

The pilot project was launched in June 2017 to preserve and restore the environment and create a sustainable future.



Swachh Bharat Abhiyan

- Launched on October 2, 2014, on the birth anniversary of Mahatma Gandhi, Swachh Bharat Abhiyan aims to eradicate open defecation and improve solid management.
- The mission was split into two-- rural and urban. In rural areas, the mission was overseen by the Ministry of Drinking Water and Sanitation whereas, in urban areas, it was overseen by the Ministry of Housing and Urban Affairs.



Key Achievements:

- 26,563 Swachh Bharat Activities done.
- 84,720 Swachh Bharat Pledges taken.
- 6,106 Swachh Bharat Pakhwada Activities done.
- Around 110 million toilets constructed between 2014 and 2019. (Toilets Before Temples)



Phase I of the mission was completed in October 2019. Phase II of the mission will last until 2024-25.

Network is Net worth

- ▶ Travel
- ▶ Meet new people
- ▶ Cover Entire Band of Society

COLLABORATIONS & NETWORKING

**This is an era of international/ interdisciplinary,
Symbiotic research. The walls of Subjects , branches,
Cities , universities, Sr. and Jr. are to be dissolved
Immediately. Every in depth and successful
research has its problems and solutions in each others
Fields.**

Some Intermediate space to ponder upon OUT OF BOX

Dissolving the boundaries of Subjects, Branches and cultivating
Interdisciplinary approach **towards SUSTAINABILITY**

- ▶ Innovation Centre
- ▶ Co working space
- ▶ Knowledge Labs
- ▶ Knowledge Centre
- ▶ Think labs
- ▶ Design Studios
- ▶ Knowledge Café
- ▶ Open Libraries

TRAININGS ARE VERY IMPORTANT: UPDATION is the **MANTRA**

▶ We have developed large number of Courses / Workshops / sessions

1. **Research Methodology (for ensuring Innovation)** - at 60 colleges for over 6000 + Faculty members
2. **Advanced Teaching Methodology (in line with NEP)** at 50 Colleges for over 10000 faculty members
3. **Social Entrepreneurship & Social Innovation** for over 2000 + Faculty & Students
4. **Fake News & impact Social Media & Technology** for over 1000 + professionals, Students & Teachers
5. **Green / Environmental issues (six courses are already being delivered & 09 more will ready soon) such as**

- ▶ 1) Green economy
- ▶ 2) sustainable development & governance
- ▶ 3) Environmental Law
- ▶ 4) waste management
- ▶ 5) Environment and sustainability
- ▶ 6) social corporate Responsibility

Lets Commit for Going GREEN

- ▶ As a teachers / Professionals lets - Conduct Awareness programs, trainings, mentoring, hand holding & equipping our students for new Challenges for adapting Green in all walks of life
- ▶ As a Student lets - keep learning , Updating, Socializing, enhancing Curiosities, **finding opportunities to uplift the society through finding the problems & then right Solutions** & motivating each other for more positivity

THANK YOU

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Catch me also on

